Canonsburg, Pennsylvania, Disposal Site

Long-Term Surveillance and Maintenance Program

U.S. Department of Energy
Grand Junction Office

FACT SHEET

The Grand Junction Office has provided cost-effective and efficient stewardship for more than 10 years

Overview

Uranium and other ores were processed at the Canonsburg, Pennsylvania, site between 1911 and 1966. The milling operations created process-related waste and tailings, a sandlike material containing radioactive materials and other contaminants. Initially, the tailings were left on the Canonsburg millsite in piles. Over time, the tailings were dispersed into the environment by wind and water erosion or removed from the site for use in local construction projects. The U.S. Department of Energy (DOE) encapsulated tailings and tailings-contaminated material from the millsite and 163 vicinity properties in an engineered disposal cell. The disposal cell was completed in 1985.

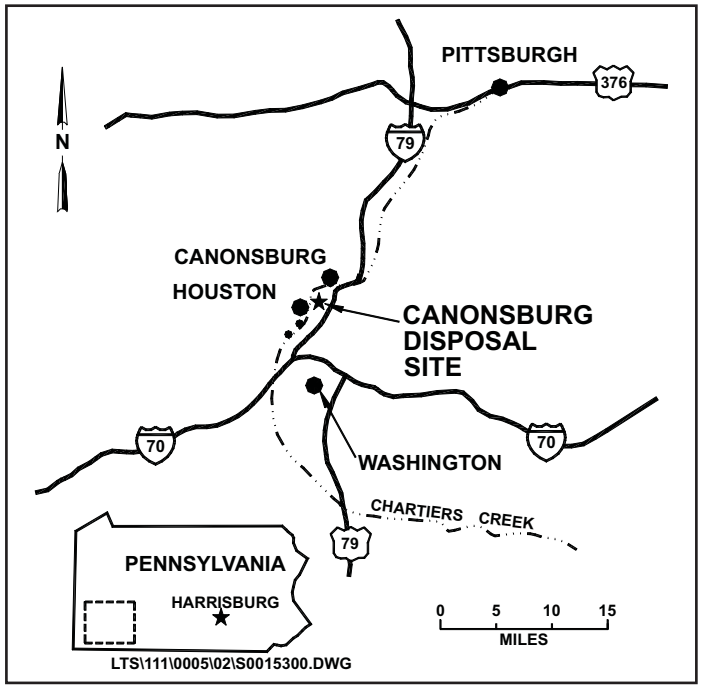
The U.S. Nuclear Regulatory Commission included the Canonsburg Disposal Cell under general license in 1996. DOE is responsible, under the general license, for the long-term custody, monitoring, and maintenance of the site. The DOE Long-Term Surveillance and Maintenance (LTSM) Program at the DOE Grand Junction (Colorado) Office is responsible for the long-term safety and integrity of the disposal site.

In 1988, DOE established the LTSM Program to provide stewardship of disposal cells that contain low-level radioactive material after completion of environmental restoration activities. The mission of the LTSM Program is to ensure that the disposal cells continue to prevent release of contaminated materials to the environment. These materials will remain potentially hazardous for thousands of years. As long as the cells function as designed, risks to human health and the environment are negligible.

The LTSM Program maintains the safety and integrity of the disposal cell through periodic monitoring, inspections, and maintenance; serves as a point of contact for stakeholders; and maintains an information repository at the DOE Grand Junction Office for all sites in the LTSM Program.

Regulatory Setting

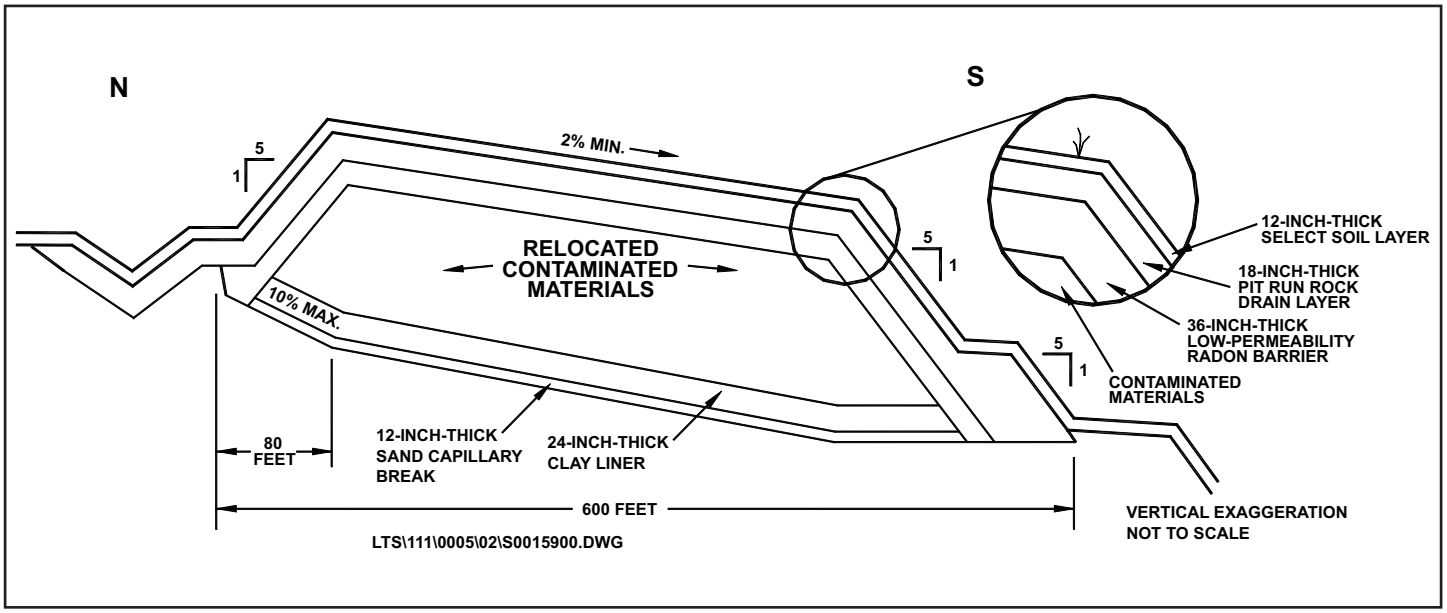
Congress passed the Uranium Mill Tailings Radiation Control Act in 1978 (Public Law 95–604) that specified remedial action for 24 inactive millsites where uranium was produced for the Federal Government. DOE remediated these sites under the Uranium Mill Tailings Remedial Action Project and encapsulated the radioactive material in U.S. Nuclear Regulatory Commission-approved disposal cells. Cleanup standards were promulgated by the U.S. Environmental Protection Agency in Title 40 *Code of Federal Regulations* (CFR) Part 192. The U.S. Nuclear Regulatory Commission general license is in accordance with 10 CFR 40.



Canonsburg Disposal Site

The Canonsburg Disposal Site is within the Borough of Canonsburg, Washington County, in southwestern Pennsylvania, approximately 20 miles southwest of downtown Pittsburgh. The 18.6-acre Canonsburg site lies between Chartiers Creek and the Pittsburgh and Ohio Central Railroad tracks. The surrounding land is primarily residential and is moderately populated.

The Canonsburg site was operated as a radium extraction plant by Standard Chemical from 1911 to 1922. Later, Vitro Corporation of America acquired the property and processed ore to extract radium and uranium salts. From 1942 until 1957, Vitro was under contract to the Federal Government to recover uranium from ore and scrap. For the next 9 years, the site was used only for storage under a U.S. Atomic Energy Commission contract. In 1967, the property was



North-South Cross Section of Canonsburg Disposal Cell

purchased by the Canon Development Company and was leased to tenant companies for light industrial use.

The Canonsburg site is underlain by as much as 30 feet of unconsolidated fill and alluvium that overlie claystones and shales of the Pennsylvanian Casselman Formation. Groundwater beneath the Canonsburg site is unconfined in the unconsolidated materials and semiconfined in the underlying bedrock. The water table lies at depths of 3 to 14 feet beneath the site. The unconsolidated materials are recharged by direct infiltration of precipitation and from southern groundwater flow beneath the site. Groundwater in the unconsolidated materials at the site flows into Chartiers Creek, which flows past the site on the west, north, and east.

Cell Design

The Canonsburg Disposal Cell occupies about 6 acres and has a compacted clay liner to protect groundwater from contamination by radioactive materials. The tailings were placed on top of the liner and covered with 3 feet of a clay-and-soil mixture that prevents the escape of radon gas from the tailings and the penetration of precipitation into the cell. The radon barrier was then covered with layers of rock and soil and was seeded with grass. The cell design promotes rapid runoff of precipitation to minimize leachate. The cell contains approximately 226,000 tons of radioactive material with a total activity of 100 curies of radium-226 and is surrounded by a posted security fence to prevent unauthorized access.

LTSM Program Activities

The LTSM Program manages the site according to a long-term surveillance plan (LTSP) prepared specifically for the Canonsburg site. Under provisions of the LTSP, the LTSM Program (1) conducts annual inspections of this site to evaluate the condition of surface features, (2) cuts the grass at least once each year and controls other vegetation, (3) performs other maintenance as necessary, and (4) continues to monitor groundwater.

The LTSM Program monitors groundwater and surface water at the site as a best management practice to evaluate potential contaminant trends within the unconsolidated materials underlying the disposal site and to ensure that the creek is not contaminated.

The disposal cell at Canonsburg is designed and constructed to last for 200 to 1,000 years. However, the general license has no expiration date, and DOE understands its responsibility for the safety and integrity of the Canonsburg site will last indefinitely.

Contacts

For more information about the LTSM Program or about the Canonsburg Disposal Site, contact

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or visit the Internet site at
http://www.gjo.doe.gov/programs/ltsm